



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,494	09/01/2006	Tsutomu Yamaguchi	056272.58171US	1869
23911 7590 07/29/2008 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300				
EXAMINER				
QIN, JIANCHUN				
ART UNIT		PAPER NUMBER		
2837				
MAIL DATE		DELIVERY MODE		
07/29/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/591,494

**Applicant(s)**

YAMAGUCHI, TSUTOMU

**Examiner**

JIANCHUN QIN

**Art Unit**

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa et al. (U.S. Pat. No. 5559297) in view of Oshima (JP 62158757 A) and Nielsen et al. (U.S. Pub. No. 20060251694).

Regarding claim 1, Yoshikawa et al. disclose a key (Fig. 1) for a keyboard-based musical instrument (Abstract; col. 1, lines 8-11) characterized by comprising: a key body (11); and a key touch member (12) disposed on the top of said key body (Figs. 1 and 2), made of a water-absorbing material, and for touching the key (col. 2, lines 9-21).

Yoshikawa et al. do not mention expressly: said water-absorbing material is a first synthetic resin having a hydrophilic polymer added thereto; wherein the hydrophilic polymer has a hydrophilic group in a main chain or a side chain thereof.

Oshima discloses a key for a keyboard-based musical instrument, wherein the key top surface of the key is made of a synthetic resin having a hydrophilic polymer added thereto (Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Yoshikawa et al. to include a key top

member made of a synthetic resin having a hydrophilic polymer added thereto, as taught by Oshima, in order to obtain a key top surface having water-absorbing properties and being good to the touch (Oshima, Abstract) which can serve as a top, playing surface of the Key, while the body of the key can be made of other material separately on the basis of its suitability and cost-effectiveness (Yoshikawa et al., col. 1, lines 28-31; col. 2, lines 9-21 and lines 36-39).

Nielsen et al. teach a Hydrophilic coating made of hydrophilic polymer which has a hydrophilic group in a main chain or a side chain thereof (§ 0037).

In view of the teaching of Nielsen et al., one having ordinary skill in the art at the time the invention was made would be able to select a hydrophilic polymer, which has a hydrophilic group in a main chain or a side chain thereof, to be applied to the combination of Yoshikawa and Oshima, since it has been held to be within the general skill of worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 2, Yoshikawa et al. do not mention expressly: said first synthetic resin is one of an acrylonitrile butadiene styrene resin, an acrylonitrile-styrene resin, and an acrylic resin.

Yoshikawa et al. disclose: said key body is made of an acrylonitrile butadiene styrene (ABS) resin (col. 2, lines 9-21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Yoshikawa et al. and Oshima to use

ABS resin as the first synthetic resin such that production of the key touch member can be efficiently conducted (Oshima, Abstract).

Regarding claim 3, Yoshikawa et al. disclose: said key body is made of ABS resin without the hydrophilic polymer added thereto, and said key touch member is adhered to said key body (Figs. 1-2; col. 2, lines 9-21).

Regarding claim 4, Yoshikawa et al. do not mention expressly: said key body is made of one of said first synthetic resin having the hydrophilic polymer added thereto and a second synthetic resin without the hydrophilic polymer added thereto, and is integrally molded with said key touch member.

Oshima discloses: a key body is made of a first synthetic resin having the hydrophilic polymer added thereto, and is integrally molded with a key touch member (Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Yoshikawa et al. to make a key, having a key touch member integrally molded with the key body, made of a first synthetic resin having a hydrophilic polymer added thereto, as taught by Oshima, such that the key not only has water-absorbing properties but also is good to the touch, and further, production can be efficiently conducted (Oshima, Abstract).

### ***Conclusion***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP §

706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Response to Arguments***

4. Applicant's arguments filed 05/27/2008 with respect to claims 1-4 have been considered but they are not persuasive.

Applicant argues that "it is improper to attempt to change Yoshikawa's perspiration-absorbing sheet, which is specifically disclosed to be formed of a material that is not a synthetic resin, because of the poor moisture-absorbing properties of synthetic resin, to be formed of a synthetic resin based on Oshima." The argument is not persuasive. The Examiner's position is that: Yoshikawa et al. disclose a key for a keyboard-based musical instrument comprising a key body and a key touch member made of a water-absorbing material disposed on the top of said key body. Yoshikawa et al. are not clear that said water-absorbing material is a synthetic resin having a

hydrophilic polymer added thereto. Oshima teaches to make a key of a keyboard instrument, including the top surface of the key, using a synthetic resin having a hydrophilic polymer added thereto. The modification of Yoshikawa as taught by Oshima to form a key top made of a synthetic resin having a hydrophilic polymer added thereto reads on the claims. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teaching of Oshima in the invention of Yoshikawa et al. in forming the key top member, in order to obtain a key surface having water-absorbing properties and being good to the touch (Oshima, Abstract) which can serve as a top, playing surface of the Key, while the body of the key can be made of other material separately on the basis of its suitability and cost-effectiveness (Yoshikawa et al., col. 1, lines 28-31; col. 2, lines 9-21 and lines 36-39).

In response to Applicant's argument that "there would be no motivation to include a synthetic resin with the properties of Oshima in Yoshikawa's perspiration-absorbing sheet because Yoshikawa's perspiration-absorbing sheet and Oshima's keyboard resin operate on the totally different fundamental principles", the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The Examiner further recognizes that the test for obviousness is not whether the features of a second reference may be bodily incorporated into the

structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, it is deemed that the prior art references teach all of the claimed elements. The difference between the prior art and the claimed invention is that the key touch member which is disposed on the top of the key body is not made of a synthetic resin having a hydrophilic polymer added thereto. The prior art shows that it was known to form the key including the key top in a synthetic resin having a hydrophilic polymer added thereto. One of ordinary skill in the art would recognize that forming the key top member, which is disposed on the top of the key body, using a synthetic resin having a hydrophilic polymer added thereto would make it possible to obtain a key top surface having water-absorbing properties and being good to the touch (as suggested by Oshima, Abstract) while keeping the body of the key to be made of different material on the basis of its suitability and cost-effectiveness (as suggested by Yoshikawa et al., col. 1, lines 28-31; col. 2, lines 9-21 and lines 36-39). It would have been obvious to one of ordinary skill in the art to implement the claimed variation of forming the key top member in synthetic resin having a hydrophilic polymer added thereto to make the key body more cost-effective, and the key top good to the touch as well as water-absorbing. The principle of operation would remain unchanged.

Applicant's argument with respect to the newly added limitation "where the hydrophilic polymer has a hydrophilic group in a main chain or a side chain thereof" has



been considered but is moot in view of the new ground(s) of rejection. See section 2 set forth above for detailed response.

The rest of the Applicant's arguments are reliant upon the issue discussed above, and are deemed to be non-persuasive as well for the reasons provided above.

***Contact Information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianchun Qin whose telephone number is (571) 272-5981. The examiner can normally be reached on 8am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on (571) 272-2227.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. Q./  
Examiner, Art Unit 2837  
/Walter Benson/  
Supervisory Patent Examiner, Art Unit 2837